

Installing NAF under CICS

This section describes how to install Natural Advanced Facilities (NAF) under CICS.

- Prerequisites
 - Installation Tape - OS/390 Systems
 - Installation Tape - VSE/ESA Systems
 - Installation Procedure
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Prerequisites

- Base Natural Version 4.1 or above must be installed.
- The Natural CICS Interface must be installed.
- It is possible to use a VSAM file as a spool file. In this case, Natural for VSAM Version 4.1 or above must be installed. For more information, see the Natural for VSAM documentation.

Installation Tape - OS/390 Systems

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset Name	Contents
NAFnnn.LOAD	Natural Advanced Facilities executable load phases and modules which are necessary for the linkage editor.
NAFnnn SRCE	Natural Advanced Facilities source modules which include macros for specific TP monitors.
NAFnnn.INPL	Natural programs including example source programs and system load modules which are necessary for Natural Advanced Facilities.
NAFnnn.SYSF	FDT for spool file used as input to Adabas load utility.
NAFnnn.ERRN	Natural Advanced Facilities error messages.

The notation *nnn* in dataset names represents the version number of the product.

Copying the Tape Contents to Disk

If you are using System Maintenance Aid (SMA), refer to the SMA documentation (included on the current edition of the Natural documentation CD).

If you are **not** using SMA, follow the instructions below.

This section explains how to:

- Copy data set COPY.JOB from tape to disk.
- Modify this data set to conform with your local naming conventions.

The JCL in this data set is then used to copy all data sets from tape to disk.

If the datasets for more than one product are delivered on the tape, the dataset COPY.JOB contains the JCL to unload the datasets for all delivered products from the tape to your disk.

After that, you will have to perform the individual install procedure for each component.

Step 1 - Copy data set COPY.JOB from tape to disk

The data set COPY.JOB (label 2) contains the JCL to unload all other existing data sets from tape to disk. To unload COPY.JOB, use the following sample JCL:

```
//SAGTAPE JOB SAG,CLASS=1,MSGCLASS=X
//* -----
//COPY EXEC PGM=IEBGENER
//SYSUT1 DD DSN=COPY.JOB,
// DISP=(OLD,PASS),
// UNIT=(CASS,,DEFER),
// VOL=(,RETAIN,SER=<Tnnnnn>),
// LABEL=(2,SL)
//SYSUT2 DD DSN=<hilev>.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=<vvvvvv>,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

Where:

<hilev> is a valid high level qualifier

<Tnnnnn> is the tape number

<vvvvvv> is the desired volser

Step 2 - Modify COPYTAPE.JOB

Modify the COPYTAPE.JOB to conform with your local naming conventions and set the disk space parameters before submitting this job:

- Set HILEV to a valid high level qualifier.
- Set LOCATION to a storage location.
- Set EXPDT to a valid expiration date.

Step 3 - Submit COPY.JOB

Submit COPY.JOB to unload all other data sets from the tape to your disk.

Installation Tape - VSE/ESA Systems

The installation tape contains the datasets listed in the table below. The sequence of the datasets is shown in the Report of Tape Creation which accompanies the installation tape.

Dataset Name	Contents
NAFnnn.LIBR	LIBR backup file.
NAFnnn.INPL	Natural programs including example source programs and system load modules which are necessary for Natural Advanced Facilities.
NAFnnn.SYSF	FDT for spool file used as input to Adabas load utility.
NAFnnn.ERRN	Natural Advanced Facilities error messages.

The notation *nnn* in dataset names represents the version number of the product.

Copying the Tape Contents to Disk

If you are using System Maintenance Aid (SMA), refer to the SMA documentation (included on the current edition of the Natural documentation CD).

If you are **not** using SMA, follow the instructions below.

This section explains how to:

- Copy data set COPYTAPE.JOB from tape to library.
- Modify this member to conform with your local naming conventions.

The JCL in this member is then used to copy all data sets from tape to disk.

If the datasets for more than one product are delivered on the tape, the member COPYTAPE.JOB contains the JCL to unload the datasets for all delivered products from the tape to your disk, except the datasets that you can directly install from tape, for example, Natural INPL objects.

After that, you will have to perform the individual install procedure for each component.

Step 1 - Copy data set COPYTAPE.JOB from tape to disk

The data set COPYTAPE.JOB (file 5) contains the JCL to unload all other existing data sets from tape to disk. To unload COPYTAPE.JOB, use the following sample JCL:

```
* $$ JOB JNM=LIBRCAT,CLASS=0,
* $$ DISP=D,LDEST=(*,UID),SYSID=1
* $$ LST CLASS=A,DISP=D
// JOB LIBRCAT
* *****
*      CATALOG COPYTAPE.JOB TO LIBRARY
* *****
// ASSGN SYS004,NNV          <----- tape address
// MTC REW,SYS004
// MTC FSF,SYS004,4
ASSGN SYSIPT,SYS004
// TLBL IJSYSIN,'COPYTAPE.JOB'
// EXEC LIBR,PARM='MSHP; ACC S=lib.sublib'    <----- for catalog
/*
// MTC REW,SYS004
ASSGN SYSIPT,FEC
/*
/&
* $$ EOJ
```

Where:

NNN is the tape address

lib.sublib is the library and sublibrary of the catalog

Step 2 - Modify COPYTAPE.JOB

Modify COPYTAPE.JOB to conform with your local naming conventions and set the disk space parameters before submitting this job:

Step 3 - Submit COPYTAPE.JOB

Submit COPYTAPE.JOB to unload all other data sets from the tape to your disk.

Installation Procedure

This section describes the jobs and steps required to install Natural Advanced Facilities (NAF). They apply to Adabas or VSAM system files.

For installation, use the jobs provided on your Natural tape (names begin with NAF).

Step 1: Modify the CICS RDO Definitions - Job I005

For performance reasons, it is strongly recommended to specify for the spool server a transaction ID which is different from that of the terminal task. It is then possible to dedicate special threads to the spool server.

VSAM System Files

The following additional step applies when using VSAM system files:

- Add the Natural Advanced Facilities spool files (SPOOL, SPOOLA, SPOOLB, SPOOLC, SPOOLD and SPOOLE) to your FCT.

Refer to the example job NAFVI005. You can also add DD statements for these datasets to your CICS startup job.

If you want to convert an existing VSAM spool file, the FCT must contain the entries for this spool file. The cluster names of the new and the old versions must be different. The VSAM database ID and file number as well as the VSAM DD-names must be unique.

Step 2: Create/Load the Spool File

Adabas Spool File - Job I050, Step 0300

The following steps only apply when using Adabas system files:

- You **must** generate a new spool file because the Adabas FDT used in Version 4.1 is not compatible with the one used in Version 2.3.
- Load the Natural Advanced Facilities spool file contained in NAF*nnn*.SYSF using the ADALOD utility. An initial size of one cylinder for this file will be sufficient. The following parameters are mandatory:

ISNREUSE=YES

to cause Adabas to reuse the ISN of a deleted record. For the file number <fspool>, you may choose any value.

VSAM Spool File - Job I008, Steps 0300 - 0311

The following steps only apply when using VSAM system files.

- Prepare VSAM Cluster for Spool File.
- Define and initialize a VSAM cluster (FSPOOL) to be used as a spool file and five alternative indices.

Step 3: Modify NAFPARMC - Job I055, Step 0305

The use of the NAFPARMC parameter module is optional. Alternatively, to set the server options, you can use Function 30 of the SYSPPOOL Application.

If using the NAFPARMC module, modify, assemble and link NARPARMC.

Step 4: Create a Separate Thread Group for Printer Transaction - Jobs I070, I080

It is recommended to establish a separate thread group for the Natural Advanced Facilities printer transaction. To do so, perform these steps:

1. **Modify the Natural/CICS Control Block - Job I070, Step 2245**
Include a definition of the Natural Advanced Facilities printer thread group into the Natural/CICS control block.
2. **Relink the Modified Natural/CICS Control Block - Job I070, Step 2250**
Repeat linking of the Natural/CICS control block.

Step 5: Modify NATPARM - Jobs I060, I080

Modify the parameters FSPOOL, NTPRINT, NAFUPF and NAFSIZE in NATPARM according to your site requirements. For more information on these parameters, see NATSPOOL Initialization.

Assemble and link the Natural parameter module NATPARM.

VSAM System Files

The following additional step applies when using VSAM system files:

- Set the FSPOOL parameter as follows:

```
FSPOOL=(vsam-dbid,fnr-fspool,dd-name-fspool)
```

The *dd-name* is limited to seven characters.

Step 6: Link the Natural Nucleus - Jobs I060, I080

Add the following INCLUDE statements in the link steps for Natural and link-edit the executable module:

OS/390	VSE/ESA
INCLUDE NAFLIB(NAFAF)	INCLUDE NAFAF
INCLUDE NAFLIB(NAFNUC)	INCLUDE NAFNUC
INCLUDE SMALIB(NAFPARMC) (optional)	INCLUDE NAFPARMC (optional)

Ensure that the Natural module NATTTY is part of your Natural nucleus, since NATTTY enables the Natural Advanced Facilities spool server to send error messages to a printer.

The link-edit of the load module containing Natural Advanced Facilities can be done in any of the following ways:

- Include all modules of Natural Advanced Facilities, that is, NAFNUC, NAFAF and, optionally, NAFPARMC, in the link-edit of Natural.

Note:

If a shared nucleus is created, the modules can be included in the shared nucleus.

- Link-edit NAFNUC, NAFAF and, optionally, NAFPARMC and an alternative Natural parameter module as a separate module with the mandatory name CMPRMTB specified in the ENTRY statement. The name of the resulting module is optional.

Note:

This way of link-editing only applies if an alternate parameter module ("PARM=" parameter) is used. If so, an additional CICS PPT entry with PROGRAM=name is required.

- Link-edit NAFNUC, NAFAF and, optionally, NAFPARMC as a separate module with the mandatory name CMAM08 specified in the ENTRY statement. The name of the resulting module is optional. If it is different from CMAM08, however, it must be specified as an alias name in an NTALIAS macro entry of the Natural parameter module.

Note:

This way of link-editing only applies if the Natural Resolve CSTATIC Addresses facility (RCA) is used. If so, an additional CICS PPT entry with PROGRAM=name is required.

The following additional step applies when using VSAM system files:

- Add the following INCLUDE instruction to all links of the Natural nucleus.

Platform	Instruction
OS/390	INCLUDE NVSLIB(NVSFSP0)
VSE/ESA	INCLUDE NVSFSP0

Step 7: Load the System Programs - Job I061, Step 0300

Load the Natural Advanced Facilities system programs into the Natural system file using the Natural INPL utility. INPL loads the maintenance programs under the application IDs SYSP00L and SYSPRINT.

Ensure that INPL finishes with the message "Natural Advanced Facilities initialized by INPL". If this initialization fails, various problems will be encountered at execution time.

This INPL file contains the source for all maps used in the Natural Advanced Facilities system.

These maps are provided in source form to enable users to customize the system (for example, to translate the maps from English to another language).

If these maps are modified, ensure that all fields have the same format/length/relative position in the map. Failure to abide by this restriction will result in an invalid system.

Step 8: Load the Error Messages - Job I061, Step 0304

Load the Natural Advanced Facilities error messages file (dataset NAFnnn.ERRN) using the ERRLODUS program as described in the Natural SYSERR Utility documentation.

Step 9: Natural Advanced Facilities and Natural Security

This step must only be performed, if Natural Advanced Facilities is being installed in a Natural Security environment.

Define SYSPPOOL to Natural Security with startup program MENU.

Note:

The physical CICS printers and the application SYSPRINT need not be defined to Natural Security. The Natural Security logon processing will identify the NATSPPOOL spool server and perform a simplified logon to SYSPRINT, that is, without any further security checks. In this way, maintenance efforts and the number of Adabas calls at the start of the spool server are considerably reduced.

Any logon to SYSPRINT attempted by users other than the NATSPPOOL spool server will be rejected by Natural Security, regardless of whether SYSPRINT is defined to it or not.

Step 10: Start Natural

Start Natural and add the user profile, as defined in the NAFUPF parameter of NATPARM, to the SYSPPOOL file using Function 31.1.

Note:

A NAT7201 message is issued at the start of the session indicating that the profile has not yet been added to the SYSPPOOL file.

Step 11: Create a Sample Conversation JCL - Job I200

Create the job NAFCONF to convert your spool file from Natural Advanced Facilities Version 2.3 into Natural Advanced Facilities Version 4.1.

Adapt this job before you submit it by entering the database identification (DBID) and the file number (FNR) as described in Conversion in Batch Mode in the section Conversion from Version 2.3.

If you already have a Natural Advanced Facilities 2.3 spool file and you want to use it under Version 4.1, its contents must be converted to the newly generated Version 4.1 spool file. This is done using the CONVERT command in library SYSPPOOL, see Conversion from Version 2.3.

You can also perform the CONVERT in batch mode by using the sample job created in Step 1 - Modify the CICS RDO Definitions- Job I005.

Step 12: Create NATSPPOOL Environment

After conversion, you must specify the general spool file options and the system-specific options for the spool server. See Function 30.5.

To initialize a new NATSPPOOL environment, see NATSPPOOL Initialization.

Step 13: Natural Advanced Facilities and VTAM/SNA

This step must only be performed, if Natural Advanced Facilities is being installed under CICS and is to be used in conjunction with VTAM/SNA printers.

- Define devices in the TCT with a RELREQ setting to (YES,YES). (This will ensure that VTAM printers are released at the end of printout time when devices are shared with TSO, BATCH, JES, etc.)
- Define TRMSTAT=INTLOG or CREATESESS=YES for the printer to allow EXEC CICS START requests to create a session.
- Ensure that the device has the SHARE option generated into the controller VTAM specifications.

Step 14: Natural Advanced Facilities and VTAM/NON-SNA

This step must only be performed, if Natural Advanced Facilities is being installed under CICS and is to be used in conjunction with VTAM/NON-SNA printers.

- Include TRMSTAT=TRANSCEIVE in the TCT definition for the device.
- Set the VTAM definition for the device parameter ISTATUS to ACTIVE.